DOCUMENT RESUME

ED 126 472 CS 002 837

AUTHOR Haugh, Oscar M.
TITLE Reading and Readability.
PUB DATE 75
NOTE 11p.; Paper presented at the Annual Meeting of the National Council of Teachers of English (65th, San Diego, November 1975)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Cloze Procedure; *Complexity Level; Elementary Secondary Education; Evaluation Methods; Higher Education; Measurement Instruments; *Readability; *Reading Comprehension; *Reading Level
IDENTIFIERS Dale Chall; *Readability Formulas; Taylor (Wilson)

ABSTRACT

Readability has been gauged by such means as determining the length of individual words in a passage, analyzing types of sentences, and assessing numbers of subordinate clauses, prepositional phrases, modifiers, and so on. Probably the most successful formula has been the Dale-Chall method, which measures readability by determining the percentage of words which are not included on a basic word list. One criticism of this technique is that the readability index of a book and the assessed reading level of a child may not be analogous. A new readability formula, subtested by Wilson Taylor, utilizes the concept of the cloze procedure. Students demonstrate comprehension by filling in every deleted fifth word in a given passage. Although the use of the cloze test bypasses the need for standardized testing, the danger of choosing a passage which is not reflective of the whole work must be noted. The question still remains whether any one readability formula may be applied to the various genres of literature. (KS)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED126472

Reading and Readability*

Oscar M. Haugh
Professor, Curriculum and Instruction
University of Kansas, Lawrence, Kansas

Whenever one encounters a title with two words which are as closely related as reading and readability, one's first reaction is, "What is the difference?" For this reason some immediate definitions seem to be in order.

To some, reading is the act of getting meaning from the printed page. To others, this is only half of the process, for they would amplify the definition by saying, "Reading is the act of getting meaning from the printed page by virtue of bringing meaning to it." The important thing about both definitions is that of "getting meaning"; thus, it is comprehension or understanding of the material read that is fundamental to the act of reading.

Readability is a relatively recent term whose definition has expanded with the passing of time. To Rudolf Flesch, who developed one of our most widely publicized formulas 25 years ago, readability meant "easy or interesting to read."[1] This limited definition was expanded a decade later by Klare who pointed out that there are three different aspects to readability: (1) legibility, which involves typography and format; (2) ease of reading, which involves the interest value or pleasantness of reading; and (3) the ease of understanding or comprehension, which is related to the style of writing.[2]

---

*A paper delivered to Workshop EF.4, "Teaching Reading in the Junior and Senior High School," at the 65th Annual Convention of the National Council of Teachers of English, San Diego, California, November 29, 1975.

[1]Rudolf Flesch. How to Test Readability. Harper and Brothers, New York, 1951.

[2]George Klare. The Measurement of Readability. Iowa State University Press, Ames, Iowa, 1963, p. 5.

CS002837

And how does the dictionary define readability? It states that readability means "capable of being read easily," and therefore, "pleasurable or interesting to read."[3] Even though comprehension or understanding is not mentioned in this definition, it is clearly implied. As teachers, we believe that reading without comprehension is worthless, thus, we are interested in a study of readability as a means of identifying those elements which affect the success that our students may have in effectively reading, and understanding, the materials that we give them.

Our problem is not a new one. We are told that hundreds of years ago Jewish scholars tried to write the Talmud in a language that their people could understand. John Wyclif had the same idea in the late fourteenth century when he was responsible for translating the Bible from the Latin Vulgate into English. In the preface he boldly announced: "The Bible is for the government of the people, by the people, and for the people."

As time has passed, many elements have been identified as important to this process of promoting ease of understanding. From the very first, vocabulary has been identified as being of central importance. The difficulty of a word has usually been determined by its frequency of use. The assumption has been that those words which are used most frequently are the easiest to understand. It was this concept that led to the development of the The Teacher's Word Book which contains the most common words of the English language grouped by their frequency of occurrence.[4] It is now possible through use of more recent editions

---

[3]William Morris, editor. The American Heritage Dictionary of the English Language. Houghton Mifflin Co., Boston, Mass., 1971, p. 1085.

[4]Edward L. Thorndike. The Teacher's Word Book. Teachers College, Columbia University, New York, 1921.

to locate the relative position of the 500 most commonly used words in the English language all the way up to those in the thirtieth thousand.

Since looking up each individual word in a passage is a laborious task, more simplified methods have been suggested. One that is current in several readability formulas is that the length of a word is an indicator of its difficulty. In some cases, syllables are counted, while in others, difficulty is measured by the number of affixes. The assumption here is that a word which has both a prefix and a suffix is more difficult than a word which has only one affix, and the simplest words obviously are those without either prefixes or suffixes.

As the length of the word has been looked upon as directly related to ease of understanding so has the length of the sentence. Again the assumption has been that the longer the sentence, the more difficult it is to understand. Many formulas have used this measure, and whenever a short but difficult sentence arises, the explanation is often given that such cases are relatively infrequent, so, if the passage analyzed is long enough, the law of averages will protect one from spurious results.

The dissatisfaction with a measure that is purely quantitative has prompted many to strive to discover some measures which are qualitative. The attempt to determine what the qualitative factors are has brought forth many different measures. Some would analyze the kinds of sentences, that is, determine the ratio of those that are simple to those that are compound, to those that are complex. An adaptation of this has been the use of the Subordination Index, which is computed by dividing the number of subordinate clauses by the total number of clauses, both dependent and independent. The result will be a decimal fraction ranging from .00 to .99. Unfortunately,

when the counting has been done, and the computation completed, there has been relatively little agreement as to what .15, .25, or .35 may mean except that we know that a passage with a subordination index of .35 has more than twice as many subordinate clauses as a passage with an index of .15.

Similarly, attempts have also been made to determine the number of prepositional phrases, as well as the number of verbals, such as the infinitive. The number of modifiers, such as adjectives and adverbs, have also been proposed as qualitative measures. All types of analyses have been made including the number of personal pronouns and even the ratio of the number of concrete words to the number of abstract words.

Obviously, some of these many measures have proved to be more effective than others. The task has not only been to find which ones are most valid but also to find if there is a combination of two or more of them which will give the kind of precise measure that we need. Probably the most successful formula has been the Dale-Chall, which measures the readability of a passage by determining the percentage of words which are not included in a basic word list of 3,000 commonly used words, and, the average number of words per sentence in several samples of at least 100 words each.[5] Important to this formula is the attempt to secure a precise ratio of these two measures to each other so that each is considered in its proper proportion rather than on a one-to-one basis. Continued research has refined the multipliers used which have made this formula increasingly accurate. Studies of it and other formulas seem to indicate that while it is not the quickest formula to compute, it

---

[5]Edgar Dale and Jeanne S. Chall. "A Formula for Predicting Readability." Educational Research Bulletin, 27 (January 1948) 11-20, and 27 (February 1948) 37-54.

does seem to give results which are both stable and valid.

Several criticisms have been made of the Dale-Chall formula. One which is often heard is that it takes too much time to work a single sample of 100 words. Those who have worked with it extensively tell us that they can complete a sample analysis in less than five minutes, especially now that tables have been developed so that computation is minimized.[6] Even so, if one were to take a sample for every ten pages of a book, two hours would be required to compute 24 samples. Such an analysis of a book will not be time wasted, for one soon finds that books, like students, are a bundle of individual differences. Annis found passages in A Tale of Two Cities and Silas Marner ranging all the way from 5th to 16th grade level, with the average for the former at grade 8 and the latter at grade 10.[7] Such knowledge, an estimate of the range from highest to lowest as well as the average for the book as a whole, may be very useful information for a teacher to have.

One of the criticisms that seems to be most valid is the fact that if one knows the readability level of a book and reading level of a child, he may still find that he cannot bring the two together successfully. There is always the problem that the standardized test used to measure a student's reading level was standardized on a population which was far different from that used in standardizing the readability formula. This may be the reason that the Dale-Chall formula states readability in more relative terms such

---

[6]Robert T. Williams. "A Table for Rapid Determination of Revised Dale-Chall Readability Scores." The Reading Teacher, 26 (Nov. 1972) 158-65.

[7]Russell Annis. "An Analysis of Readability Factors within Three Novels Commonly Taught in High School." Unpublished Master's Thesis, University of Kansas, Lawrence, 1953, pp. 57-60.

as grades 9-10, for example, rather than something so precise as 9th grade, 5th month.

Another criticism of most readability formulas in use today is that while they measure certain important factors, none of them come to grips with a measure of the difficulty of the concepts that the passage may contain. For example, "The child is father to the man" is a sentence of only 7 words, and all the words are in the basic word list; consequently, this sentence should be "very easy to read"; but, anyone who has tried to explain its meaning without going back to Plato's theory of divine pre-existence is going to have a difficult time indeed.

A new readability formula which is a complete departure from any of those existing was introduced by Wilson Taylor when he suggested using the "cloze procedure" as a measure of readability.[8] As it is used today in many testing situations, a teacher selects a passage from a book and deletes every fifth word and then asks the student to fill in the word that he thinks best fits in the blank space. Some teachers who have used the cloze test to determine readability levels advise giving the student the first sentence of the passage and starting the deletion of every fifth word with the second sentence. Ordinarily it is wise to choose a passage of over 250 words so that the student will have to supply words in at least 50 blanks. Short passages may produce spuriously high or low scores, so a passage of sufficient length is desirable. Ordinarily the student is allowed to spend as much time as he needs, and if he wishes to read the passage several times that is allowed, for the test is intended to be a "power" rather than a "speed" test.

---

[8] Wilson L. Taylor. "'Cloze Procedure': A New Tool for Measuring Readability." Journalism Quarterly, 30 (Fall 1953) 415-433.

Using the cloze test has brought forth many questions. Why choose every fifth word? How do you score the answers, as exact words or will synonyms be counted as correct? What does the percentage of the number of correct answers indicate as to level of understanding?

There is no magic in choosing every fifth word as the number for each deletion. Experiments have been conducted in which various other numbers have been tried, but every fifth word seems to have worked well in getting valid results. Experiments have also been conducted in which only the exact word of the author of the passage has been counted as correct and others where a synonym has been counted as correct. If only the exact words of the author are counted as correct the scores will be lower, but this method has the advantage of higher reliability. Then there is one correct answer and only one, and the scoring will not vary from one teacher to another.

Determining what the percentage of correct responses should be has brought forth varied results. Bormuth has suggested that if a student gets a score of 44%-57% correct, the material is suitable for instructional purposes, and if he gets more than 57% correct, he can handle the material independently.[9] Ransom has suggested a different set of standards: 50% and above indicates that the student can read the material independently, 30%-49% correct means that the material is suitable for instructional purposes, and 20% and below indicates that the student will experience frustration if he were to attempt material on this level of difficulty.[10]

---

[9]John R. Bormuth. "The Cloze Readability Procedure." Readability in 1968. National Council of Teachers of English, Champaign, Illinois, 1968, p. 45.

[10]Peggy Ransom. "A Study to Determine Reading Levels of Elementary School Children by Cloze Testing." Dissertation Abstracts, 26, p. 3705.

And just what is it that the cloze test measures? It does come closer toward giving the teacher a measure of the student's understanding of the concepts expressed by the author of a passage, for he must insert the words the author used in expressing his ideas. But more than this is measured. By being forced to insert the exact words the student is also forced to call upon his background of understanding not only of the topic being discussed but also of the language that is being used. A student who has a good knowledge of how language operates will do better in a test of this type, as he will also be the one who does better in understanding the passage when he reads it with none of the words deleted. Some teachers have such faith in the cloze test that they are willing to use it as a test of comprehension after a selection has been read and studied.

One of the advantages of using the cloze test is that it brings the material to the student and thus by-passes the necessity of giving him a standardized test to determine his level of reading ability. While the three levels, independent, instructional, and frustrational, are very broad, they do indicate to the teacher how successful the student will be in reading the material being tested. Furthermore, if the material read happens to be in an area where the student has special interests and extensive background of information, his competence in reading this type of material will be reflected in a higher percentage of success, even though such a passage might be judged as too difficult by a formula which uses such factors as word and sentence length and fails to take special knowledge and background into consideration.

But the cloze procedure does have some limitations too. First of all, which passages should one choose from a book for the test? There is always the danger of choosing a passage that is too easy or too difficult and thus

ending with an erroneous conclusion. Some teachers have solved this problem by using one of the other readability formulas over a sufficiently large number of passages chosen at random. Then one could identify passages which are rated as easy, average, or difficult, and use one passage of each type as a cloze exercise. While this would entail considerable work, a department with several members could share some of the labors involved. I might add that I know one secondary school English teacher who has trained several capable students in the use of the Dale-Chall formula which has permitted her to expedite her testing tremendously. Also, if a teacher is considering the purchase of a textbook or other teaching materials, evidence of readability level of the material should be requested from the publisher.

One of the most important factors in all of our research concerning readability has not been investigated fully enough; yet, it is one with which the English teacher is particularly concerned. Are readability formulas equally effective for all the various genre of literature? The authors of our readability formulas have used expository prose materials principally; thus, conclusions drawn should apply to exposition. However, does this mean that we can then use these same formulas for narrative prose? And what of drama? and will poetic material make any difference?

It is clear that additional research is needed, and we have already begun to collect evidence to answer some of these questions just raised. Oden found that the Dale-Chall formula and cloze test both ranked narrative and expository material in the same order.[11] Apparently the fact that both were prose explains this similarity in the results. Thus, it does seem safe to use these

[11]Judy A. Oden. "A Comparative Study of the Dale-Chall Formula and the Cloze Test Procedure for Determining the Readability of Tenth Grade Literature Material." Unpublished Master's Thesis, University of Kansas, Lawrence, 1972, p. 58.

two formulas with short stories and novels even though these literary genre may not have been used in the original research.

Barnes pursued this problem a bit further by using the Dale-Chall formula and the cloze procedure to test selections from six different types of literature: lyric poetry, narrative poetry, biography, essay, drama, and the novel.[12] Neither the Dale-Chall formula nor the cloze test gave a good indication of the readability level of the poetry selections. This was not true for the drama, but this selection was in prose, and had it been a poetic drama instead, it is possible that the results would have been different.

And where has all this research led us? It is obvious that we have come a long way from the days when the best that the teacher could do was "play a hunch" or make some type of "educated guess" as to whether the child could or could not effectively read the material given him. We have a better understanding now of reading and readability and how they are related. And we have begun to discover some types of objective measures which have given us more accurate information about the difficulty of materials and how we can use this information to teach our students more effectively. But we are not yet at the point where we know all the answers for all types of students and all types of material. We should take pride in the progress that we have made, for the last 25 years have been rich indeed in discovery. Let us use what we have learned thus far and continue the search in the hope that our discoveries about reading and readability may be as rich in the next 25 years remaining of the 20th century.

---

[12] Judy A. Barnes. "A Comparative Study of the Dale-Chall Formula and the Cloze Test Procedure for Determining the Readability of Six Selections from Different Genre." Unpublished Master's Thesis, University of Kansas, Lawrence, 1973.